ABSTRACT

ANALYSIS OF DRUG SAMPLING TO DETERMINE DRUG DISTRIBUTION PATTERNS IN CENTRAL KALIMANTAN PROVINCE USING DATA MINING METHOD

Drugs sampling and testing in the context of post marketing control is an important component to ensure drugs safety in the supply chains. The results are used by Indonesia National Agency of Drug and Food Control (NA-FDC) for conducting public warning, evaluating the Good Manufacturing Practice (GMP) and Good Distribution Practice (GDP) implementation and enforcing the law against drug violation. This study aimed to determine the drug distribution patterns in order to provide an overview of drugs sampling in the public sector.

The drugs sampling data was obtained from BBPOM Palangka Raya's database in the Integrated Information Reporting Systems (SIPT) application during 2014 to 2018. Data mining process using CRISP-DM methodology and k-means *cluster*ing model was used. The clustering model was applied in Rapidminer version 8.2 software. In data preparation, the attributes namely the name of drug sample, therapeutic classes, district/city, sample category and evaluation of drugs surveillance were created for dataset.

The drugs distribution patterns was formed in 3 clusters. First cluster contains 522 drug items consisting of 8 therapeutic classes spread over 10 districts, second cluster contains 1542 drug items consisting of 5 therapeutic classes spread over 5 districts and third cluster contains 503 drug items consisting of 11 therapeutic classes spread across 9 districts.

The drugs sampling data clustering showed that data mining methods can be used for decision improvement in drugs sampling planning and provide indepth information which has impact on improving the performance of drug post marketing control in Central Kalimantan Province.

Keywords: drug distribution patterns, drug quality control, drug sampling, clustering, CRISP-DM, data mining